

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

1 24

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 04/11/2014		2. CONTRACT NO. (If any) EP-C-12-055		6. SHIP TO:	
3. ORDER NO. 0017		4. REQUISITION/REFERENCE NO. PR-R3-14-00192		a. NAME OF CONSIGNEE CPOD	
5. ISSUING OFFICE (Address correspondence to) (FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268				b. STREET ADDRESS US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD	
				c. CITY Cincinnati	e. ZIP CODE 45268
7. TO:				f. SHIP VIA	
a. NAME OF CONTRACTOR TETRA TECH, INC.				8. TYPE OF ORDER	
b. COMPANY NAME				<input type="checkbox"/> a. PURCHASE <input checked="" type="checkbox"/> b. DELIVERY Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
c. STREET ADDRESS 10306 EATON PLACE STE 340				REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.	
d. CITY FAIRFAX	e. STATE VA	f. ZIP CODE 220302201			
9. ACCOUNTING AND APPROPRIATION DATA See Schedule				10. REQUISITIONING OFFICE CPOD	
11. BUSINESS CLASSIFICATION (Check appropriate box(es)) <input type="checkbox"/> a. SMALL <input type="checkbox"/> b. OTHER THAN SMALL <input type="checkbox"/> c. DISADVANTAGED <input type="checkbox"/> d. WOMEN-OWNED <input type="checkbox"/> e. HUBZone <input type="checkbox"/> f. SERVICE-DISABLED VETERAN-OWNED <input type="checkbox"/> g. WOMEN-OWNED SMALL BUSINESS (WOSB) ELIGIBLE UNDER THE WOSB PROGRAM <input type="checkbox"/> h. EDWOSB					12. F.O.B. POINT Destination

13. PLACE OF		14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	16. DISCOUNT TERMS
a. INSPECTION Destination	b. ACCEPTANCE Destination			

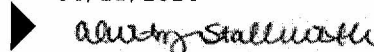
17. SCHEDULE (See reverse for Rejections)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	DUNS Number: (b)(4) Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs Continued ...					

SEE BILLING INSTRUCTIONS ON REVERSE	18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17(h) TOTAL (Cont. pages)	
	21. MAIL INVOICE TO:							
	a. NAME RTP Finance Center						\$113,681.00	
	b. STREET ADDRESS (or P.O. Box) US Environmental Protection Agency RTP-Finance Center Mail Drop D143-02 109 TW Alexander Drive						\$113,681.00	
c. CITY Durham						d. STATE NC	e. ZIP CODE 27711	17(i) GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature)

04/11/2014



ELECTRONIC SIGNATURE

23. NAME (Typed)
Courtney Stallworth
TITLE: CONTRACTING/ORDERING OFFICER

**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

PAGE NO

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IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER

CONTRACT NO.

ORDER NO.

04/11/2014

EP-C-12-055

0017

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0001	<p>TOPO: Jennifer Sincock Max Expire Date: 03/27/2018 Admin Office: CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268 Accounting Info: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 BFY: 14 EFY: 15 Fund: B Budget Org: 03LP0CB Program (PRC): 202B63 Budget (BOC): 2505 DCN - Line ID: 1403LL1014-001 Period of Performance: 04/11/2014 to 09/27/2014</p> <p>Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473. Cost Plus Fixed Fee Term: \$113,681 Level of Effort: 1044 Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Term Form</p>				113,681.00	
0002	<p>Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473. Cost Plus Fixed Fee Term: \$130,194 Level of Effort: 1143 Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Continued ...</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$113,681.00

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OPTIONAL FORM 348 (Rev. 4/2006)

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**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

PAGE NO

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CONTRACT NO.

ORDER NO.

04/11/2014

EP-C-12-055

0017

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0003	<p>Term Form (Option Line Item) 07/28/2014</p> <p>Period of Performance: 09/28/2014 to 09/27/2015</p> <p>Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473. Cost Plus Fixed Fee Term: \$130,440 Level of Effort: 1116 Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Term Form (Option Line Item) 07/28/2015</p> <p>Period of Performance: 09/28/2015 to 09/27/2016</p>					
0004	<p>Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473. Cost Plus Fixed Fee Term: \$132,235 Level of Effort: 1096 Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Term Form (Option Line Item) 07/28/2016</p> <p>Continued ...</p>					

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**ORDER FOR SUPPLIES OR SERVICES
SCHEDULE - CONTINUATION**

PAGE NO

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IMPORTANT: Mark all packages and papers with contract and/or order numbers.

DATE OF ORDER

CONTRACT NO.

ORDER NO.

04/11/2014

EP-C-12-055

0017

ITEM NO. (a)	SUPPLIES/SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
0005	<p>Period of Performance: 09/28/2016 to 09/27/2017</p> <p>Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473. Cost Plus Fixed Fee Term: \$128,445 Level of Effort: 1042 Award Type: Cost-plus-fixed-fee Total Estimated Cost: \$(b)(4) Fixed Fee: \$(b)(4) Term Form (Option Line Item) 07/28/2017</p> <p>Period of Performance: 09/28/2017 to 03/27/2018</p> <p>The total amount of award: \$634,995.00. The obligation for this award is shown in box 17(i).</p>					

TOTAL CARRIED FORWARD TO 1ST PAGE (ITEM 17(H))

\$0.00

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B-1 EPAAR 1552-237-72 KEY PERSONNEL. (APR 1984)

- (a) The Contractor shall assign to this contract the following key personnel:

Watershed Modeler:

(b)(4)

Trading and Offsets Expert:

(b)(4)

- (b) During the first ninety (90) days of performance, the Contractor shall make no substitutions of key personnel unless the substitution is necessitated by illness, death, or termination of employment. The Contractor shall notify the Contracting Officer within 15 calendar days after the occurrence of any of these events and provide the information required by paragraph (c) of this clause. After the initial 90-day period, the Contractor shall submit the information required by paragraph (c) to the Contracting Officer at least 15 days prior to making any permanent substitutions.
- (c) The Contractor shall provide a detailed explanation of the circumstances necessitating the proposed substitutions, complete resumes for the proposed substitutes, and any additional information requested by the Contracting Officer. Proposed substitutes should have comparable qualifications to those of the persons being replaced. The Contracting Officer will notify the Contractor within 15 calendar days after receipt of all required information of the decision on substitutions. This clause will be modified to reflect any approved changes of key personnel.

**B-2 LOCAL CLAUSES EPA-B-16-102 ESTIMATED COST AND FIXED FEE
BASE PERIOD**

- (a) The estimated cost of this contract is \$(b)(4)
- (b) The fixed fee is \$(b)(4)
- (c) The total estimated cost and fixed fee is \$113,681

LOCAL CLAUSES EPA-G-42-101 CONTRACT ADMINISTRATION REPRESENTATIVES

Task Order-Level Contracting Officers Representatives (CORs)/Project Officers for this Task Order are as follows:

Task Order COR

Jennifer Sincock
USEPA REGION 3
1650 Arch Street

Mail Code: 3WP30

Philadelphia, PA 19103-2029

Phone: 215-814-5766

Email: Sincock.jennifer@epa.gov

Alternate Task Order COR

Cheryl Atkinson

USEPA REGION 3

1650 Arch Street

Mail Code: 3WP30

Philadelphia, PA 19103-2029

Phone: 215-814-3392

Email: Atkinson.cheryl@epa.gov**1552.217-71 Option to extend the term of the contract-cost-type contract. (APR 1984)**

The Government has the option to extend the term of this contract for two additional period(s). If more than 30 days remain in the contract period of performance, the Government, without prior written notification, may exercise this option by issuing a contract modification. To exercise this option within the last 30 days of the period of performance, the Government must provide to the Contractor written notification prior to that last 30-days of the period. This preliminary notification does not commit the Government to exercising the option. Use of an option will result in the following contract modifications:

(a) The "Period of Performance" clause will be amended to cover a base period and option periods:

	Period Start Date	End Date
Base Period	04/11/2014	09/27/2014
Option Period 1	09/28/2014	09/27/2015
Option Period 2	09/28/2015	09/27/2016
Option Period 3	09/28/2016	09/27/2017
Option Period 4	09/28/2017	03/27/2018

(b) Paragraph (a) of the "Level of Effort" clause will be amended to reflect a new and separate level of effort of:

Period	Level of Effort
Base Period	1044
Option Period 1	1143
Option Period 2	1116
Option Period 3	1096
Option Period 4	1042

(c) The "Estimated Cost and Fixed Fee" clause will be amended to reflect increased estimated costs and fixed fee for each option period as follows:

Period	Estimated Cost	Fixed Fee	Total CPFF
Option Period 1	\$(b)(4)	\$(b)(4)	\$113,681
Option Period 2	\$	\$	\$130,194
Option Period 3	\$	\$	\$130,440
Option Period 4	\$	\$	\$128,445

(d) If the contract contains "not to exceed amounts" for elements of other direct costs (ODC), those amounts will be increased as follows: N/A

**PERFORMANCE WORK STATEMENT
TSAWP CONTRACT
EPC12055
Task Order 17**

A. TITLE: Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support – Support of EPA’s Review of Chesapeake Bay Jurisdictions’ Offset and Trading Programs

B. BACKGROUND & OBJECTIVES

Background

On December 29, 2010, the U.S. Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL). A TMDL calculates the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. The Chesapeake Bay TMDL is the largest, most complex TMDL in the country, covering a 64,000-square-mile area across seven jurisdictions for the tidal segments and tributaries of the Chesapeake Bay that are impaired due to excessive loads of nitrogen, phosphorus and sediment. The Chesapeake Bay TMDL allocates loading caps to sources contributing those pollutants in seven jurisdictions of the Bay watershed—Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia. Leading up to 2017, the Chesapeake Bay TMDL calls for a midpoint assessment to review progress toward meeting the nutrient and sediment pollutant load reductions identified in the 2010 Chesapeake Bay TMDL and the Bay jurisdictions’ Phase I and Phase II Watershed Implementation Plans (WIPs). This was designed as a mid-course check on progress to allow necessary adjustments in strategies to ensure that the Chesapeake Bay Program Partnership (Partnership) could achieve its 2025 goals for putting the necessary practices in place to restore Chesapeake Bay water quality to levels achieving water quality standards. A Phase III Watershed Implementation Plan is expected to be prepared by each jurisdiction which will address any needed adjustments.

The Bay jurisdictions bear the responsibility for implementing the Bay TMDL as outlined in their Phase I and II WIPs. Offset and trading programs are possible tools the jurisdictions may utilize to implement the Bay TMDL. EPA expects that new or increased loadings of nitrogen, phosphorous and sediments in the Chesapeake Bay watershed will be offset by loading reductions and credits generated by other sources. Beyond permitting and nonpoint source controls, water quality trading is one approach that Bay jurisdictions may use to achieve the load reduction requirements established under the Bay TMDL.

Water quality trading is a market-based approach, providing an economic incentive for voluntary pollutant reductions from point and nonpoint sources of pollution, to improve and preserve water quality. Trading can provide greater efficiency in achieving water quality goals in watersheds by allowing one source to meet its regulatory obligations by using pollutant reductions created by another source with lower pollution control costs.

EPA recognizes that a number of Chesapeake Bay jurisdictions are already implementing water quality trading programs. EPA supports implementation of the Bay TMDL through water quality trading programs, as long as they are established and implemented in a manner consistent with the Clean Water Act (CWA), its implementing regulations, EPA's 2003 Water Quality Trading Policy and the 2007 Water Quality Trading Toolkit for NPDES Permit Writers. EPA does not support any trading activity that would delay or weaken implementation of the Bay TMDL, that is inconsistent with the assumptions and requirements of the TMDL, or that would cause the combined point source and nonpoint source loadings covered by a trade to exceed the applicable loading cap established by the TMDL.

To promote the success of trading and offset programs in the jurisdictions, EPA intends to maintain regular oversight of jurisdictions' programs through periodic programmatic reviews and evaluations beginning with EPA's initial assessment of the jurisdictions trading and offset programs during 2011-2012. EPA's findings informed the offset and trading provisions that jurisdictions included in their Phase II WIPs. To further support the jurisdictions as they continue to develop and modify their offset and trading programs, EPA had committed to develop a series of technical memorandums (TMs), consistent with the Bay TMDL's Appendix S, for several offset and trading related topics. Several of these TMs have been drafted and are in various stages of completion. Additional information can be found at EPA's Bay TMDL website:

<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

The U.S. Environmental Protection Agency (EPA) is seeking contractor assistance with the tasks described below to support trading and offset work and activities on the midpoint assessment and also support local partners in deciding how to cost-effectively implement the pollutant load reductions and manage load growth called for in their jurisdiction's WIPs. The Jurisdictions', at some point in the future, may have trading and offset programs that apply outside the Chesapeake Bay Watershed. It is the intent of this performance work statement to apply to those programs also.

Objectives

Included among the Bay TMDL 2017 midpoint assessment priorities, EPA will continue its oversight role on the implementation of the Bay TMDL where trading and offset programs are utilized to meet the 2017 interim goal of the Bay TMDL. EPA will also assist in determining what changes should be considered to existing jurisdictions' trading and offset programs as the Partnership moves from the 2017 midpoint and focuses on implementation of the jurisdictions' Phase III WIPs to meet the 2025 TMDL goal.

EPA, the seven watershed jurisdictions, along with their federal agency partners, will also continue to monitor progress towards meeting the TMDL load reductions and load growth utilizing the existing accountability framework. This accountability framework, described within the Chesapeake Bay TMDL (see Section L, "References") includes the jurisdictions' WIPs, two-year milestones by jurisdictions and federal agencies, annual progress reporting and tracking, and federal actions, if needed. As part of this effort, the Partnership will need to continue to simulate jurisdictions' baseline and credit calculations, among other programmatic applications, and evaluate the nutrient and sediment controls associated with

various best management practices (BMPs) using the Chesapeake Bay Program modeling tools.

C. TASKS

The contractor shall provide support for the below tasks in the Base Period and in each Option Period. Written technical direction will be utilized to provide further detail on specific work included in the Performance Work Statement (PWS), provide guidance, or approve or comment on deliverables. The Task Order Project Officer (TOPO), the Alternate TOPO (if the TOPO is on leave or travel), and the Contracting Officer are the only individuals authorized to issue technical direction. The contractor shall anticipate working with the TOPO, staff leads from EPA Water Protection Division (WPD), Chesapeake Bay Program Office (CBPO) and jurisdictions to furnish the requested technical assistance.

However only the TOPO may issue written technical direction, which will be the sole basis for the contractor to incur billable costs.

The individual(s) working on this activity need to have the skills and experience of a Chesapeake Bay watershed modeler, with a working understanding of the Trading and Offset Technical Memoranda being developed by EPA Region 3 (see Section L, "References").

Task 1: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOPO either in person or via conference call to discuss the following: points of contact, roles and responsibilities, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls, monthly technical progress reports, and general Task Order administrative information. The technical progress reports shall include status updates of all of the tasks of this PWS.

The TOPO will coordinate and set-up monthly working calls between EPA staff and the contractor's technical lead to discuss the status and progress of the work under this Task Order. The contractor shall participate in these monthly calls. The frequency of the monthly conference calls may be modified based on project status at the request of the contractor and only as approved by EPA.

The contractor shall notify the TOPO of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays. The contractor shall provide a written monthly status report in accordance with contract requirements which will be used for invoice review purposes. All reporting shall be provided in accordance with the PWS Sections E and F.

In general, written materials including meeting summaries shall be furnished by the contractor within five business days after request in draft form for the TOPO to review; then a final written deliverable would be expected within five business days after receipt of written technical direction from the TOPO, including the TOPO's comments and edits to the draft deliverable.

Task 2: Support for Developing Technical Memoranda to Assist Jurisdictions' Development of Offset and Trading Programs.

EPA needs assistance with researching, writing and completing the following Technical Memoranda (a – l) below that will provide the jurisdictions further guidelines as to EPA's expectations for responding to the findings referred to in the Background section of this document. These Technical Memoranda are not official agency guidance and are only applicable in the Chesapeake Bay watershed. It is also limited to the monitoring and estimation of annual loads. It is important that annual load monitoring and load calculations be accurate to insure that existing loads comply with the Waste Load Allocations (WLAs) and that new loads are offset completely. The 2010 Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment¹ (Bay TMDL) expects the Bay jurisdictions to offset all new or increased loads and identifies trading as a tool that can be used to implement the Bay TMDL. The programs are expected to be consistent with the Bay TMDL, including its allocations and assumptions and the common elements of Appendix S. Jurisdictions' offset and trading programs also should be consistent with the Clean Water Act², its implementing regulations, EPA's 2003 Water Quality Trading Policy,³ and EPA's 2007 Water Quality Trading Toolkit for NPDES Permit Writers.⁴ These Technical Memoranda include but are not limited to:

a) Technical Memorandum on Representative Sampling

The contractor shall support EPA in developing a Technical Memorandum on representative sampling. This Technical Memorandum addresses the load calculation methodology and sampling frequency of Chesapeake Bay watershed wastewater treatment plants and identifies an approach that should result in data sufficient to support Chesapeake Bay jurisdictions' trading and offset programs. (Additional technical memorandums have been or shall be developed that address specific aspects of the jurisdictions' offset and trading programs).

Data collected by EPA from one Waste Water treatment Plant (WWTP) in PA and one in VA is sufficient to estimate the potential error introduced into Total Nitrogen (TN) and Total Phosphorous (TP) total load calculations from using only one or two samples of plant discharge per week that are subsequently aggregated to monthly estimates. The data from the two facilities also allow for a quantitative assessment of the cost effectiveness of increasing the number of samples per week in terms of improvement in the total TN and TP load calculations. Finally, the data from the VA and PA WWTPs enable a comparison of two alternative methods for calculating total loads.

This technical memorandum assesses the post-treatment loads from two WWTPs. This technical memorandum and its associated analysis are based upon the assumption that sampling is random and that there is no bias created by drawing samples at non-

¹ Full text of the Bay TMDL may be found at:

<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>

² Clean Water Act, 33 U.S.C. §§ 1251 et seq.

³ <http://www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf>

⁴ United States Environmental Protection Agency, "Water Quality Trading Toolkit for Permit Writers," Updated June 2009. Available online at <http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm>

⁵ The Chesapeake Bay jurisdictions are: Delaware, Maryland, Pennsylvania, New York, Virginia, West Virginia, and the District of Columbia

representative modes of operation. The conclusions and recommendations to be drawn should be able to account for the fact that samples can be taken at non-representative points of time. The objectives of this technical memorandum are to:

- Determine if there are weekly, monthly or seasonal influences on the load calculations,
- Assess how changes in sampling frequency change the accuracy of the results,
- Assess the relationship among sampling frequency, accuracy of load estimates, and sampling cost, and
- Assess bias in average monthly loads using two different calculation methods.

b) Technical Memorandum on Baseline Demonstration for Jurisdictions

The contractor shall support EPA in the evaluation and development of baseline demonstrations for the Chesapeake Bay jurisdictions' to support their offset/trading programs. The purpose of this evaluation is to determine if the agricultural and stormwater trading and offset baseline and credits generated for trading and offsets meet the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL) for nitrogen, phosphorus, and sediment. This evaluation is solely for the purpose of determining if the jurisdictions' trading and offset baselines are acceptable in the context of the Bay TMDL as defined in Section 10 and Appendix S⁶. The conclusions from this evaluation are not intended to be used for any other purpose than establishing the baseline and the credits generated for a trade and/or offset as comparable to the TMDL allocation and load reductions calculated by the Chesapeake Bay Program Watershed Model-Hydrological Simulation Program-Fortran. Model comparison is neither evaluated for nor intended to be used for Watershed Implementation Plans (WIPs), Annual Progress Review, Milestones or any other EPA or Chesapeake Bay Program use of the Watershed Model. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, and the Bay TMDL.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from the Chesapeake Assessment and Scenerio Tool (CAST), the Maryland Assessment and Scenerio Tool (MAST), the Virginia Assessment Scenerio Tool (VAST), Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions. EPA will provide these scenarios to the contractor.

c) Technical Memorandum on Credit Calculation Methodology

⁶ Full text of the 2010 TMDL is available at <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>. Last accessed 11/30/2012.

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Calculation Methodology using the tools Nutrient Tracking Tool. These models and calculation tools will be provided by EPA and USDA

d) Technical Memorandum on Interstate Trading

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Interstate Trading. Some Chesapeake Bay Watershed jurisdictions have proposed the buying and selling credits across jurisdiction boundaries. Anticipate the memorandum being up to ten (10) pages. Further information will be provided by the Task order Contracting Officer Representative through Technical Direction.

e) Technical Memorandum on MS4 and Construction permits Trading and TMDL

The contractor shall support EPA in the evaluation and development of a Technical Memorandum on MS4 and Construction permits to support stormwater trading and offset programs for Chesapeake Bay jurisdictions. This TM shall address credit purchases and sale by NPDES-permitted MS4s, NPDES-permitted construction, and NPDES-permitted industrial stormwater facilities. This TM will not be addressing off-site reductions on property owned by the same owner or fee-in-lieu programs for meeting load requirements. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, the Bay TMDL, and other expectations.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from CAST/MAST/VAST, Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions.

f) Technical Memorandum on Net Improvement Offset

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Net Improvement Offsets. Net Improvement Offsets, for purposes of the Bay TMDL, this means an offset at a ratio greater than merely accounting for the entire new or increased load. The jurisdiction's offset program would need to provide the authority and procedures for invoking such a provision. This tool might be considered as a means to accelerate load reductions where a jurisdiction is not on a schedule to ensure that nitrogen, phosphorus, and sediment controls are in place by 2017 and 2025 to meet interim and final target loads, respectively. This may be determined based on an EPA evaluation of a jurisdiction's progress on its WIP and 2-year milestones, as discussed in EPA's December 29, 2009 letter (USEPA 2009d). Net improvement offsets also might be considered, in the case of permitted point sources, to offset new or increased loads from nonpoint sources or from point sources not expected to be permitted.

g) Technical Memorandum on Sector Growth Demonstration

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Sector Load Growth Demonstration. This technical memorandum is intended to assist the Bay jurisdictions with their determination of whether the loads of nitrogen, phosphorus, and/or sediment are projected to increase for any particular sector and, therefore, whether the jurisdiction will need an offset program to accommodate handling those projected offsets should they occur, as opposed to handling such offsets on a case-by-case basis. This increase in the load(s) of nitrogen, phosphorus, and/or sediment is referred to as "growth".

h) Technical Memorandum on Trading Ratio based upon Uncertainty

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Trading Ratio based upon Uncertainty. This Technical Memorandum identifies EPA's expectations for how the Chesapeake Bay jurisdictions should address the issue of uncertainty in their respective offset and/or trading programs. This Technical Memorandum will address methods to reduce uncertainty in the calculation of credits used for offsets or trading in the Chesapeake Bay watershed. Uncertainty in trading or offsets has multiple sources, including variability in best management practice (BMP) effectiveness, weather, soils, and BMP maintenance and success.

BMP effectiveness values were developed by subject area experts working with the Chesapeake Bay Program. When each effectiveness value was developed, the effectiveness value was discounted for certain types of uncertainty that include: operational conditions, implementation date and time to maturity, and variation in natural conditions. The effectiveness values implicitly address those sources of uncertainty.

Other sources of uncertainty exist that are not implicitly addressed in credit generation and calculation. Such sources of uncertainty include, but are not limited to, lag times, land use changes, soils, and failed credit generation. Given that uncertainty is unavoidable, EPA expects the Bay jurisdictions to incorporate an uncertainty ratio(s) that are to be developed in this Technical Memorandum in their offset and/or trading programs.

i) Technical Memorandum on Verification Measures relating to nutrient credit trading and offsets

The contractor shall support EPA in evaluation and development of a Technical Memorandum on verification measures relating to nutrient credit trading and offsets. Verification of the credit generating activity is performed to ensure that the best management practice (BMP) was installed and maintained properly to meet appropriate criteria. EPA has the following expectations for verification:

- Verification should be conducted after the practice is implemented and before the seller and buyer enter into a contractual agreement and on an annual basis thereafter.
- Verification should be conducted by trained and independent verifiers.
- Verifiers should consider factors related to the BMP installation, effectiveness, and duration.
- Verification should be performed on a representative sample of credit generating practices.

- Verification results should be made publically available.

j) Technical Memorandum on Credit Permanence

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Permanence. This technical memorandum addresses credit permanence when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL). Credit permanence in the context of the Bay TMDL and NPDES permits is defined as the period of time that a credit purchaser should purchase credits to meet the obligations of its NPDES permit. This technical memorandum will provide examples of situations that illustrate appropriate periods of time.

k) Technical Memorandum on Additionality

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Additionality.

This Technical Memorandum will address how to determine if credits generated are additional to load reductions that would have occurred without a trading or offset program. The 2010 Chesapeake Bay TMDL specifies, and this technical memorandum reiterates, that credit generation may occur only after baseline has been met. Baseline is equivalent to the state sector allocations under the TMDL. For permitted facilities, the WLA is the baseline and the WLA requirements for the permitted facility that wants to enter into trading must be met prior to credit generation. Where permit conditions are not quantifiable, then credits may be neither generated nor purchased to meet the permit.

Credits used to offset loads should be additional to what is already planned and in existence, and may not be a component of a jurisdiction's approved plan for meeting the sector allocations under regulations in existence before 2010. Credits generated must be for practices implemented after the issuance of the TMDL in 2010. Credits generated by permitted facilities should be additional to what is in permits that were written prior to the issuance of the 2010 TMDL.

l) Technical Memorandum on Local Water Quality Protection

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Local Water Quality Protection. This technical memorandum addresses protection of local water quality when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL).

For the purposes of this technical memorandum, "local waters" means the receiving waters adjacent to where the credit is being generated as well as the receiving waters adjacent to where the credit is being used, namely, at the point of discharge.

Task 2 Deliverables:

All written documentation and files produced by the contractor and provided to the TOPO shall be in an electronic format that EPA can support. The contractor shall:

1. Furnish written monthly progress updates of each activity under this task requested by the TOPO through technical direction in their quarterly technical progress reports described under Task 1.
2. Provide immediate written notification to the TOPO of any delays in completing any activities under this task.
3. Prepare and provide EPA with preparation first draft Technical Memorandums for the above listed topics based on discussions with individual EPA Technical Memorandum leads identified in EPA Region 3 work plan. EPA will provide these drafts to the Chesapeake Bay jurisdictions for review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
4. Compile into a summary report comments provided by individual jurisdictions and stakeholders which were provided to EPA through emails, telephone calls with, and written replies from jurisdictions and stakeholders regarding each Technical Memorandum. Each draft is due within 15 days of discussion with EPA Technical Memorandum lead.
5. Prepare and possibly give presentations internally and externally to EPA, jurisdictions and stakeholders as requested by individual EPA Technical Memorandum lead Assist during EPA internal and external meetings and telephone conference calls with note taking.
6. Attend meetings with EPA regarding the scoping and clarification of issues raised regarding these technical memorandums.
7. Prepare a final draft of each Technical Memorandum for each topic according to the schedule in EPA Region 3's work plan for EPA's review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
8. Finalize all Technical Memorandums within 15 days of discussion with individual EPA Technical Memorandum lead. These final technical memoranda may be revised periodically.

D. SCHEDULE OF BENCHMARKS & DELIVERABLES

All deliverables developed under this Task Order must be provided to the TOPO in an electronic format supported by EPA. Reports must be of high quality. Work must reflect a high level of technical proficiency and be clearly explained and documented.

Base Period (Task order award - September 27, 2014)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Task 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of task order award.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through April 30, 2014.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period I (September 28, 2014–September 27, 2015)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of the start of Option Period I.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through April 30, 2015.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period II (September 28, 2015–September 27, 2016)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period II.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through April 30, 2016.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period III (September 28, 2016–September 27, 2017)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period III.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through April 30, 2017.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period IV (September 28, 2017–March 27, 2018)

1	<p>1.1 Participate Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period IV.</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through April 30, 2018.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in a given period, the contractor shall make a determination that the deliverables, milestones, benchmarks, and any outstanding technical direction from the TOPO, shall be satisfactorily completed in the form requested in the PWS by the end of the Period of Performance and for the remaining funding that is available.

If the contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the period of performance and with the available

funding, the contractor shall notify the TOPO and the CO immediately. Within five business days of said notification, the TOPO in coordination with the CO will provide technical direction concerning use of the remaining funding to prepare and furnish to the TOPO all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

E. REPORTING

All documentation and reporting under this Task Order shall be in compliance with contract requirements.

F. DELIVERABLES AND GENERAL PERFORMANCE

The contractor shall participate in meetings and conference calls arranged by the EPA TOPO. The contractor shall when requested by the TOPO provide supporting documentation when EPA is reviewing draft deliverables to facilitate EPA review and approval of the contractor's work. Documentation will include the electronic files and detailed, written explanation of all steps and decisions. The contractor is expected to comply with this request when it is received from the TOPO regardless of whether such a request is described in the individual tasks of this PWS. The contractor is expected to furnish this information in such manner that no proprietary software will be needed for EPA to read, interpret, replicate or model any work product of this agreement, unless otherwise noted in this PWS or by written permission of the EPA TOPO. The objective is that anyone with the appropriate skill level can use the information produced under this Task Order to check or duplicate the contractor's work for replication and/or verification. With this understanding of how this Task Order's data will be used, any elements essential to successfully replicating analysis shall be provided to EPA in a commonly-used format.

The contractor shall provide to the TOPO written evidence of the contractor's scientific/technical and editorial review as defined in Section 2.6 of the Prime Contract Performance Work Statement on any Task Order **draft** product before submission to the EPATOPO for review. This process does not need to be performed by an independent peer reviewer. It is expected that all editorial review comments will be addressed before deliverables are furnished to the EPA TOPO for review (in the case of draft deliverables) or acceptance (in the case of final deliverables); and that questions raised by scientific/technical review will be either addressed or discussed with the EPA TOPO prior to the contractor furnishing draft deliverables.

EPA anticipates that the contractor's work will be judged "satisfactory" according to the QASP if the TOPO's edits to deliverables are no more than ten percent (10%) of the content of any draft deliverable, or less than two percent (2%) of any final deliverable. In addition, EPA anticipates that the Contractor's work will be judged "satisfactory" according to the QASP if less than ten percent (10%) of the pages of written final deliverables contain the TOPO's edits for such things as grammar, punctuation and format. The EPA TOPO can upon request furnish a copy of the EPA correspondence manual for the contractor's use.

All deliverables (draft and final) to EPA shall be furnished in an electronic format that EPA can support (see TSAWP Contract PWS Section 4.0 Deliverables). All final deliverables shall be prepared according to EPA publication guidelines and shall be compliant with Section 508 of the Americans with Disabilities Act.

All draft and final deliverables from the contractor under this PWS are potentially subject to Freedom of Information Act requests.

All submittals to EPA shall be formatted as described below:

- Any written reports, summaries or analysis documents shall be in electronic Microsoft Word®.
- Any and all spreadsheets, raw data, coding and modeling work (including all model runs with essential data to replicate model runs) shall be in electronic Microsoft Excel® or XML formats.

Appropriate electronic format that is supported by EPA and printing of all GIS data layers, maps, photos, bench sheets and other written material not easily printed or saved in the above formats will be discussed and a format agreed upon with the EPA TOPO prior to submittal by the contractor.

G. ANTICIPATED TRAVEL

All travel under this Task Order shall be in compliance with contract requirements and only according to specific written Technical Direction from the TOPO. (See contract clause H-17). The following travel is anticipated under the following Tasks:

Task 2 — Periodic travel to CBPO in Annapolis, Md., when in-person meetings are required. Anticipated three to four in-person meetings per year, the vast majority of the interactions being conducted through conference calls.

Based on the above information, in each base and option period the contractor shall expect one to two in-person meetings throughout the Bay watershed and three to four in-person meetings at CBPO in Annapolis, Md. The length of the meetings and amount of contractor personnel needed for each trip will be provided to the contractor through written technical direction from the TOPO.

H. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the EPA TOPO.

I. MEETING GUIDELINES AND LIMITATIONS:

Travel is not anticipated to be routine under this contract. EPA expects that the majority of the dollars to go toward the development of the technical documents. EPA projects that none of the individual meetings identified in these tasks will exceed a total cost of \$1,000 with total travel not to exceed \$5,000 in any performance period. The contractor shall immediately notify the EPA Contracting Officer, PO and TOPO of any anticipated individual event which meets the definition of a "conference," with total net expenditures anticipated to be greater than \$20,000.

A **"conference" or "conference-related activity"** is an internal or external meeting, retreat, seminar, symposium or event that involves expenses from the following categories: attendee travel paid for by the EPA; training activities; or EPA hosted or co-hosted, sponsored or co-sponsored events incurring speaker fees, food and refreshment expenses, non-federal facility expenses, audio visual expenses and/or contract related conference expenses. **"Conference expenses"** are all direct and indirect conference costs paid by the government, whether paid directly by agencies or reimbursed by agencies to travelers or others associated with the conference, but do not include funds paid under federal grants to grantees. Conference expenses include any associated authorized travel and per diem expenses, hire of rooms for official business, audiovisual use, light refreshments, registration fees, ground transportation, and other expenses as defined by the Federal Travel Regulation. All outlays for conference preparation and planning should be included. The FTR provides some examples of direct and indirect conference costs included within conference expenses. After notifying EPA of the potential to reach this threshold, the contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

J. QUALITY ASSURANCE SURVEILLANCE PLAN: Per contract requirements.

K. VALIDATION OF SECTION 508 COMPLIANCE OF TASK ORDER DELIVERABLES

The Contractor shall support the TOPO in conducting a "Final Deliverable Validation" to ensure compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to "electronic and information technology (EIT) deliverables". The Contractor shall furnish certification, in writing, to the TOPO that the Contractor has complied with EPAAR Clause 1552.211-79 "Compliance with EPA Policies for Information Resources Management", including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>.

L. REFERENCES

Links to background documents relevant to this Task Order:

December 2010 Chesapeake Bay TMDL:
<http://www.epa.gov/chesapeakebaytmdl>

Chesapeake Bay Program Partnership's Modeling Tools:
http://www.chesapeakebay.net/groups/group/modeling_team

Chesapeake Bay Program Partnership's ChesapeakeStat Website:
<http://stat.chesapeakebay.net/>

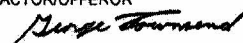
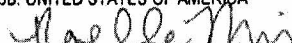
Chesapeake Bay Jurisdictions' Watershed Implementation Plans
<http://www.chesapeakebay.net/about/programs/watershed>

Chesapeake Bay Jurisdictions' Trading and Offset Information:
<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

M. GOVERNMENT FURNISHED INFORMATION/TOOLS

The following tools will be provided by the TOPO to the contractor within 15 days after the contract has been awarded:

- Chesapeake Bay Scenario Builder
- Chesapeake Assessment and Scenario Tool
- Phase 5.3.2 Chesapeake Bay Watershed Model
- Chesapeake Bay TMDL Tracking and Accounting System

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
						1 5	
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
001		09/16/2014		PR-CPOD-14-00197			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
		CPOD		CPOD		CPOD	
(FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268				CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268			
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				9A. AMENDMENT OF SOLICITATION NO.			
TETRA TECH, INC. 10306 EATON PLACE STE 340 FAIRFAX VA 220302201				(x)			
				9B. DATED (SEE ITEM 11)			
				10A. MODIFICATION OF CONTRACT/ORDER NO.			
				EP-C-12-055			
				0017			
				10B. DATED (SEE ITEM 13)			
				04/11/2014			
CODE		(b)(4)		FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended. <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
See Schedule							
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
CHECK ONE							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-2 Changes, EPAAR 1552.217-71 Option to Extend the Term, & FAR 52.232-22 Limitation of Funds							
X							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not. <input checked="" type="checkbox"/> is required to sign this document and return <u>1</u> copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
DUNS Number: (b)(4)							
The purpose of this modification is to:							
- Descope the Base Period by 624 hours and \$69,488, for a revised total for the Base Period of 420 hours at \$44,193							
- Exercise Option Period I in the amount of \$130,194							
- Incrementally fund Option Period I with \$69,488 of funding which is shifted from the Base Period to Option Period I							
- Replace the PWS in its entirety with the attached PWS reflecting the base period changes							
See attached Task Order clauses for additional detail.							
TOPO: Jennifer Sincock Max Expire Date: 03/27/2018							
Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
George Townsend, Vice President				Noelle Mills			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
		9/17/2014				9/17/14	
(Signature of person authorized to sign)				(Signature of Contracting Officer)			
NSN 7540-01-152-8070 Previous edition unusable							
STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243							

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-C-12-055/0017/001PAGE OF
2 5NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>LIST OF CHANGES:</p> <p>Reason for Modification: Exercise Option Period I & Descope Base Period</p> <p>CHANGES FOR LINE ITEM NUMBER: 1 (Base Period)</p> <p>Description changed to Provide services in accordance with attached Performance Work Statement entitled, "Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support-Support for EPA's Review of Chesapeake Bay Jurisdictions' Offset and Trading Programs." This task order award is a result of RFP PR-R3-13-00473.</p> <p>Level of Effort: 420</p> <p>Total Amount changed from \$113,681.00 to \$44,193.00</p> <p>Obligated Amount for this modification: -\$69,488.00</p> <p>CHANGES FOR ACCOUNTING CODE:</p> <p>14-15-B-03LP0CB-202B63-2505-1403LL1014-001</p> <p>Amount changed from \$113,681.00 to \$44,193.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 2 (Option Period I)</p> <p>Obligated Amount for this modification: \$69,488.00</p> <p>Incremental Funded Amount changed from \$0.00 to \$69,488.00</p> <p>Exercised option</p> <p>NEW DELIVERY LOCATION RECORD:</p> <p>Region 3</p> <p>US Environmental Protection Agency</p> <p>1650 Arch Street</p> <p>Philadelphia PA 19103-2029</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code:</p> <p>14-15-B-03LP0CB-202B63-2505-1403LL1014-001</p> <p>Beginning Fiscal Year 14</p> <p>Ending Fiscal Year 15</p> <p>Fund (Appropriation) B</p> <p>Budget Organization 03LP0CB</p> <p>Program (PRC) 202B63</p> <p>Budget (BOC) 2505</p> <p>Job # (Site/Project)</p> <p>Cost Organization</p> <p>DCN-LineID 1403LL1014-001</p> <p>Amount: \$69,488.00</p> <p>Payment Address:</p> <p>Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-C-12-055/0017/001PAGE OF
3 5NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711 FOB: Destination Period of Performance: 04/11/2014 to 09/27/2015				

**PERFORMANCE WORK STATEMENT
TSAWP CONTRACT
EP-C-12-055 TO 0017**

A. TITLE: Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support – Support of EPA’s Review of Chesapeake Bay Jurisdictions’ Offset and Trading Programs

B. BACKGROUND & OBJECTIVES

Background

On December 29, 2010, the U.S. Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL). A TMDL calculates the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. The Chesapeake Bay TMDL is the largest, most complex TMDL in the country, covering a 64,000-square-mile area across seven jurisdictions for the tidal segments and tributaries of the Chesapeake Bay that are impaired due to excessive loads of nitrogen, phosphorus and sediment. The Chesapeake Bay TMDL allocates loading caps to sources contributing those pollutants in seven jurisdictions of the Bay watershed—Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia. Leading up to 2017, the Chesapeake Bay TMDL calls for a midpoint assessment to review progress toward meeting the nutrient and sediment pollutant load reductions identified in the 2010 Chesapeake Bay TMDL and the Bay jurisdictions’ Phase I and Phase II Watershed Implementation Plans (WIPs). This was designed as a mid-course check on progress to allow necessary adjustments in strategies to ensure that the Chesapeake Bay Program Partnership (Partnership) could achieve its 2025 goals for putting the necessary practices in place to restore Chesapeake Bay water quality to levels achieving water quality standards. A Phase III Watershed Implementation Plan is expected to be prepared by each jurisdiction which will address any needed adjustments.

The Bay jurisdictions bear the responsibility for implementing the Bay TMDL as outlined in their Phase I and II WIPs. Offset and trading programs are possible tools the jurisdictions may utilize to implement the Bay TMDL. EPA expects that new or increased loadings of nitrogen, phosphorous and sediments in the Chesapeake Bay watershed will be offset by loading reductions and credits generated by other sources. Beyond permitting and nonpoint source controls, water quality trading is one approach that Bay jurisdictions may use to achieve the load reduction requirements established under the Bay TMDL.

Water quality trading is a market-based approach, providing an economic incentive for voluntary pollutant reductions from point and nonpoint sources of pollution, to improve and preserve water quality. Trading can provide greater efficiency in achieving water quality goals in watersheds by allowing one source to meet its regulatory obligations by using pollutant reductions created by another source with lower pollution control costs.

EPA recognizes that a number of Chesapeake Bay jurisdictions are already implementing water quality trading programs. EPA supports implementation of the Bay TMDL through

water quality trading programs, as long as they are established and implemented in a manner consistent with the Clean Water Act (CWA), its implementing regulations, EPA's 2003 Water Quality Trading Policy and the 2007 Water Quality Trading Toolkit for NPDES Permit Writers. EPA does not support any trading activity that would delay or weaken implementation of the Bay TMDL, that is inconsistent with the assumptions and requirements of the TMDL, or that would cause the combined point source and nonpoint source loadings covered by a trade to exceed the applicable loading cap established by the TMDL.

To promote the success of trading and offset programs in the jurisdictions, EPA intends to maintain regular oversight of jurisdictions' programs through periodic programmatic reviews and evaluations beginning with EPA's initial assessment of the jurisdictions trading and offset programs during 2011-2012. EPA's findings informed the offset and trading provisions that jurisdictions included in their Phase II WIPs. To further support the jurisdictions as they continue to develop and modify their offset and trading programs, EPA had committed to develop a series of technical memorandums (TMs), consistent with the Bay TMDL's Appendix S, for several offset and trading related topics. Several of these TMs have been drafted and are in various stages of completion. Additional information can be found at EPA's Bay TMDL website:

<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

The U.S. Environmental Protection Agency (EPA) is seeking contractor assistance with the tasks described below to support trading and offset work and activities on the midpoint assessment and also support local partners in deciding how to cost-effectively implement the pollutant load reductions and manage load growth called for in their jurisdiction's WIPs. The Jurisdictions', at some point in the future, may have trading and offset programs that apply outside the Chesapeake Bay Watershed. It is the intent of this performance work statement to apply to those programs also.

Objectives

Included among the Bay TMDL 2017 midpoint assessment priorities, EPA will continue its oversight role on the implementation of the Bay TMDL where trading and offset programs are utilized to meet the 2017 interim goal of the Bay TMDL. EPA will also assist in determining what changes should be considered to existing jurisdictions' trading and offset programs as the Partnership moves from the 2017 midpoint and focuses on implementation of the jurisdictions' Phase III WIPs to meet the 2025 TMDL goal.

EPA, the seven watershed jurisdictions, along with their federal agency partners, will also continue to monitor progress towards meeting the TMDL load reductions and load growth utilizing the existing accountability framework. This accountability framework, described within the Chesapeake Bay TMDL (see Section L, "References") includes the jurisdictions' WIPs, two-year milestones by jurisdictions and federal agencies, annual progress reporting and tracking, and federal actions, if needed. As part of this effort, the Partnership will need to continue to simulate jurisdictions' baseline and credit calculations, among other programmatic applications, and evaluate the nutrient and sediment controls associated with various best management practices (BMPs) using the Chesapeake Bay Program modeling tools.

C. TASKS

The contractor shall provide support for the below tasks in the Base Period and in each Option Period. Written technical direction will be utilized to provide further detail on specific work included in the Performance Work Statement (PWS), provide guidance, or approve or comment on deliverables. The Task Order Project Officer (TOPO), the Alternate TOPO (if the TOPO is on leave or travel), and the Contracting Officer are the only individuals authorized to issue technical direction. The contractor shall anticipate working with the TOPO, staff leads from EPA Water Protection Division (WPD), Chesapeake Bay Program Office (CBPO) and jurisdictions to furnish the requested technical assistance. **However only the TOPO may issue written technical direction, which will be the sole basis for the contractor to incur billable costs.**

The individual(s) working on this activity need to have the skills and experience of a Chesapeake Bay watershed modeler, with a working understanding of the Trading and Offset Technical Memoranda being developed by EPA Region 3 (see Section L, "References").

Task 1: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOPO either in person or via conference call to discuss the following: points of contact, roles and responsibilities, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls, monthly technical progress reports, and general Task Order administrative information. The technical progress reports shall include status updates of all of the tasks of this PWS.

The TOPO will coordinate and set-up monthly working calls between EPA staff and the contractor's technical lead to discuss the status and progress of the work under this Task Order. The contractor shall participate in these monthly calls. The frequency of the monthly conference calls may be modified based on project status at the request of the contractor and only as approved by EPA.

The contractor shall notify the TOPO of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays. The contractor shall provide a written monthly status report in accordance with contract requirements which will be used for invoice review purposes. All reporting shall be provided in accordance with the PWS Sections E and F.

In general, written materials including meeting summaries shall be furnished by the contractor within five business days after request in draft form for the TOPO to review; then a final written deliverable would be expected within five business days after receipt of written technical direction from the TOPO, including the TOPO's comments and edits to the draft deliverable.

Task 2: Support for Developing Technical Memoranda to Assist Jurisdictions' Development of Offset and Trading Programs.

EPA needs assistance with researching, writing and completing the following Technical Memoranda (a – l) below that will provide the jurisdictions further guidelines as to EPA's expectations for responding to the findings referred to in the Background section of this document. These Technical Memoranda are not official agency guidance and are only applicable in the Chesapeake Bay watershed. It is also limited to the monitoring and estimation of annual loads. It is important that annual load monitoring and load calculations be accurate to insure that existing loads comply with the Waste Load Allocations (WLAs) and that new loads are offset completely. The 2010 Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment¹ (Bay TMDL) expects the Bay jurisdictions to offset all new or increased loads and identifies trading as a tool that can be used to implement the Bay TMDL. The programs are expected to be consistent with the Bay TMDL, including its allocations and assumptions and the common elements of Appendix S. Jurisdictions' offset and trading programs also should be consistent with the Clean Water Act², its implementing regulations, EPA's 2003 Water Quality Trading Policy,³ and EPA's 2007 Water Quality Trading Toolkit for NPDES Permit Writers.⁴ These Technical Memoranda include but are not limited to:

a) Technical Memorandum on Representative Sampling

The contractor shall support EPA in developing a Technical Memorandum on representative sampling. This Technical Memorandum addresses the load calculation methodology and sampling frequency of Chesapeake Bay watershed wastewater treatment plants and identifies an approach that should result in data sufficient to support Chesapeake Bay jurisdictions'⁵ trading and offset programs. (Additional technical memorandums have been or shall be developed that address specific aspects of the jurisdictions' offset and trading programs).

Data collected by EPA from one Waste Water treatment Plant (WWTP) in PA and one in VA is sufficient to estimate the potential error introduced into Total Nitrogen (TN) and Total Phosphorous (TP) total load calculations from using only one or two samples of plant discharge per week that are subsequently aggregated to monthly estimates. The data from the two facilities also allow for a quantitative assessment of the cost effectiveness of increasing the number of samples per week in terms of improvement in the total TN and TP load calculations. Finally, the data from the VA and PA WWTPs enable a comparison of two alternative methods for calculating total loads.

This technical memorandum assesses the post-treatment loads from two WWTPs. This technical memorandum and its associated analysis are based upon the assumption that sampling is random and that there is no bias created by drawing samples at non-

¹ Full text of the Bay TMDL may be found at:

<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>

² Clean Water Act, 33 U.S.C. §§ 1251 et seq.

³ <http://www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf>

⁴ United States Environmental Protection Agency, "Water Quality Trading Toolkit for Permit Writers," Updated June 2009. Available online at <http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm>

⁵ The Chesapeake Bay jurisdictions are: Delaware, Maryland, Pennsylvania, New York, Virginia, West Virginia, and the District of Columbia

representative modes of operation. The conclusions and recommendations to be drawn should be able to account for the fact that samples can be taken at non-representative points of time. The objectives of this technical memorandum are to:

- Determine if there are weekly, monthly or seasonal influences on the load calculations,
- Assess how changes in sampling frequency change the accuracy of the results,
- Assess the relationship among sampling frequency, accuracy of load estimates, and sampling cost, and
- Assess bias in average monthly loads using two different calculation methods.

b) Technical Memorandum on Baseline Demonstration for Jurisdictions

The contractor shall support EPA in the evaluation and development of baseline demonstrations for the Chesapeake Bay jurisdictions' to support their offset/trading programs. The purpose of this evaluation is to determine if the agricultural and stormwater trading and offset baseline and credits generated for trading and offsets meet the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL) for nitrogen, phosphorus, and sediment. This evaluation is solely for the purpose of determining if the jurisdictions' trading and offset baselines are acceptable in the context of the Bay TMDL as defined in Section 10 and Appendix S⁶. The conclusions from this evaluation are not intended to be used for any other purpose than establishing the baseline and the credits generated for a trade and/or offset as comparable to the TMDL allocation and load reductions calculated by the Chesapeake Bay Program Watershed Model-Hydrological Simulation Program-Fortran. Model comparison is neither evaluated for nor intended to be used for Watershed Implementation Plans (WIPs), Annual Progress Review, Milestones or any other EPA or Chesapeake Bay Program use of the Watershed Model. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, and the Bay TMDL.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from the Chesapeake Assessment and Scenerio Tool (CAST), the Maryland Assessment and Scenerio Tool (MAST), the Virginia Assessment Scenerio Tool (VAST), Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions. EPA will provide these scenarios to the contractor.

c) Technical Memorandum on Credit Calculation Methodology

⁶ Full text of the 2010 TMDL is available at <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>. Last accessed 11/30/2012.

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Calculation Methodology using the tools Nutrient Tracking Tool. These models and calculation tools will be provided by EPA and USDA

d) Technical Memorandum on Interstate Trading

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Interstate Trading. Some Chesapeake Bay Watershed jurisdictions have proposed the buying and selling credits across jurisdiction boundaries. Anticipate the memorandum being up to ten (10) pages. Further information will be provided by the Task order Contracting Officer Representative through Technical Direction.

e) Technical Memorandum on MS4 and Construction permits Trading and TMDL

The contractor shall support EPA in the evaluation and development of a Technical Memorandum on MS4 and Construction permits to support stormwater trading and offset programs for Chesapeake Bay jurisdictions. This TM shall address credit purchases and sale by NPDES-permitted MS4s, NPDES-permitted construction, and NPDES-permitted industrial stormwater facilities. This TM will not be addressing off-site reductions on property owned by the same owner or fee-in-lieu programs for meeting load requirements. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, the Bay TMDL, and other expectations.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from CAST/MAST/VAST, Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions.

f) Technical Memorandum on Net Improvement Offset

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Net Improvement Offsets. Net Improvement Offsets, for purposes of the Bay TMDL, this means an offset at a ratio greater than merely accounting for the entire new or increased load. The jurisdiction's offset program would need to provide the authority and procedures for invoking such a provision. This tool might be considered as a means to accelerate load reductions where a jurisdiction is not on a schedule to ensure that nitrogen, phosphorus, and sediment controls are in place by 2017 and 2025 to meet interim and final target loads, respectively. This may be determined based on an EPA evaluation of a jurisdiction's progress on its WIP and 2-year milestones, as discussed in EPA's December 29, 2009 letter (USEPA 2009d). Net improvement offsets also might be considered, in the case of permitted point sources, to offset new or increased loads from nonpoint sources or from point sources not expected to be permitted.

g) Technical Memorandum on Sector Growth Demonstration

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Sector Load Growth Demonstration. This technical memorandum is intended to assist the Bay jurisdictions with their determination of whether the loads of nitrogen, phosphorus, and/or sediment are projected to increase for any particular sector and, therefore, whether the jurisdiction will need an offset program to accommodate handling those projected offsets should they occur, as opposed to handling such offsets on a case-by-case basis. This increase in the load(s) of nitrogen, phosphorus, and/or sediment is referred to as "growth".

h) Technical Memorandum on Trading Ratio based upon Uncertainty

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Trading Ratio based upon Uncertainty. This Technical Memorandum identifies EPA's expectations for how the Chesapeake Bay jurisdictions should address the issue of uncertainty in their respective offset and/or trading programs. This Technical Memorandum will address methods to reduce uncertainty in the calculation of credits used for offsets or trading in the Chesapeake Bay watershed. Uncertainty in trading or offsets has multiple sources, including variability in best management practice (BMP) effectiveness, weather, soils, and BMP maintenance and success.

BMP effectiveness values were developed by subject area experts working with the Chesapeake Bay Program. When each effectiveness value was developed, the effectiveness value was discounted for certain types of uncertainty that include: operational conditions, implementation date and time to maturity, and variation in natural conditions. The effectiveness values implicitly address those sources of uncertainty.

Other sources of uncertainty exist that are not implicitly addressed in credit generation and calculation. Such sources of uncertainty include, but are not limited to, lag times, land use changes, soils, and failed credit generation. Given that uncertainty is unavoidable, EPA expects the Bay jurisdictions to incorporate an uncertainty ratio(s) that are to be developed in this Technical Memorandum in their offset and/or trading programs.

i) Technical Memorandum on Verification Measures relating to nutrient credit trading and offsets

The contractor shall support EPA in evaluation and development of a Technical Memorandum on verification measures relating to nutrient credit trading and offsets. Verification of the credit generating activity is performed to ensure that the best management practice (BMP) was installed and maintained properly to meet appropriate criteria. EPA has the following expectations for verification:

- Verification should be conducted after the practice is implemented and before the seller and buyer enter into a contractual agreement and on an annual basis thereafter.
- Verification should be conducted by trained and independent verifiers.
- Verifiers should consider factors related to the BMP installation, effectiveness, and duration.
- Verification should be performed on a representative sample of credit generating practices.

- Verification results should be made publically available.

j) Technical Memorandum on Credit Permanence

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Permanence. This technical memorandum addresses credit permanence when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL). Credit permanence in the context of the Bay TMDL and NPDES permits is defined as the period of time that a credit purchaser should purchase credits to meet the obligations of its NPDES permit. This technical memorandum will provide examples of situations that illustrate appropriate periods of time.

k) Technical Memorandum on Additionality

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Additionality.

This Technical Memorandum will address how to determine if credits generated are additional to load reductions that would have occurred without a trading or offset program. The 2010 Chesapeake Bay TMDL specifies, and this technical memorandum reiterates, that credit generation may occur only after baseline has been met. Baseline is equivalent to the state sector allocations under the TMDL. For permitted facilities, the WLA is the baseline and the WLA requirements for the permitted facility that wants to enter into trading must be met prior to credit generation. Where permit conditions are not quantifiable, then credits may be neither generated nor purchased to meet the permit.

Credits used to offset loads should be additional to what is already planned and in existence, and may not be a component of a jurisdiction's approved plan for meeting the sector allocations under regulations in existence before 2010. Credits generated must be for practices implemented after the issuance of the TMDL in 2010. Credits generated by permitted facilities should be additional to what is in permits that were written prior to the issuance of the 2010 TMDL.

l) Technical Memorandum on Local Water Quality Protection

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Local Water Quality Protection. This technical memorandum addresses protection of local water quality when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL).

For the purposes of this technical memorandum, "local waters" means the receiving waters adjacent to where the credit is being generated as well as the receiving waters adjacent to where the credit is being used, namely, at the point of discharge.

Task 2 Deliverables:

All written documentation and files produced by the contractor and provided to the TOPO shall be in an electronic format that EPA can support. The contractor shall:

1. Furnish written monthly progress updates of each activity under this task requested by the TOPO through technical direction in their quarterly technical progress reports described under Task 1.
2. Provide immediate written notification to the TOPO of any delays in completing any activities under this task.
3. Prepare and provide EPA with preparation first draft Technical Memorandums for the above listed topics based on discussions with individual EPA Technical Memorandum leads identified in EPA Region 3 work plan. EPA will provide these drafts to the Chesapeake Bay jurisdictions for review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
4. Compile into a summary report comments provided by individual jurisdictions and stakeholders which were provided to EPA through emails, telephone calls with, and written replies from jurisdictions and stakeholders regarding each Technical Memorandum. Each draft is due within 15 days of discussion with EPA Technical Memorandum lead.
5. Prepare and possibly give presentations internally and externally to EPA, jurisdictions and stakeholders as requested by individual EPA Technical Memorandum lead Assist during EPA internal and external meetings and telephone conference calls with note taking.
6. Attend meetings with EPA regarding the scoping and clarification of issues raised regarding these technical memorandums.
7. Prepare a final draft of each Technical Memorandum for each topic according to the schedule in EPA Region 3's work plan for EPA's review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
8. Finalize all Technical Memorandums within 15 days of discussion with individual EPA Technical Memorandum lead. These final technical memoranda may be revised periodically.

D. SCHEDULE OF BENCHMARKS & DELIVERABLES

All deliverables developed under this Task Order must be provided to the TOPO in an electronic format supported by EPA. Reports must be of high quality. Work must reflect a high level of technical proficiency and be clearly explained and documented.

Base Period (Task order award - September 27, 2014)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Task 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of task order award.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2014.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period I (September 28, 2014–September 27, 2015)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of the start of Option Period I.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2015.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period II (September 28, 2015–September 27, 2016)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period II.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2016.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period III (September 28, 2016–September 27, 2017)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period III.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2017.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period IV (September 28, 2017–March 27, 2018)

1	<p>1.1 Participate Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period IV.</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p> <p>Monthly On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through March 27, 2018.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in a given period, the contractor shall make a determination that the deliverables, milestones, benchmarks, and any outstanding technical direction from the TOPO, shall be satisfactorily completed in the form requested in the PWS by the end of the Period of Performance and for the remaining funding that is available.

If the contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the period of performance and with the available

funding, the contractor shall notify the TOPO and the CO immediately. Within five business days of said notification, the TOPO in coordination with the CO will provide technical direction concerning use of the remaining funding to prepare and furnish to the TOPO all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

E. REPORTING

All documentation and reporting under this Task Order shall be in compliance with contract requirements.

F. DELIVERABLES AND GENERAL PERFORMANCE

The contractor shall participate in meetings and conference calls arranged by the EPA TOPO. The contractor shall when requested by the TOPO provide supporting documentation when EPA is reviewing draft deliverables to facilitate EPA review and approval of the contractor's work. Documentation will include the electronic files and detailed, written explanation of all steps and decisions. The contractor is expected to comply with this request when it is received from the TOPO regardless of whether such a request is described in the individual tasks of this PWS. The contractor is expected to furnish this information in such manner that no proprietary software will be needed for EPA to read, interpret, replicate or model any work product of this agreement, unless otherwise noted in this PWS or by written permission of the EPA TOPO. The objective is that anyone with the appropriate skill level can use the information produced under this Task Order to check or duplicate the contractor's work for replication and/or verification. With this understanding of how this Task Order's data will be used, any elements essential to successfully replicating analysis shall be provided to EPA in a commonly-used format.

The contractor shall provide to the TOPO written evidence of the contractor's scientific/technical and editorial review as defined in Section 2.6 of the Prime Contract Performance Work Statement on any Task Order **draft** product before submission to the EPATOPO for review. This process does not need to be performed by an independent peer reviewer. It is expected that all editorial review comments will be addressed before deliverables are furnished to the EPA TOPO for review (in the case of draft deliverables) or acceptance (in the case of final deliverables); and that questions raised by scientific/technical review will be either addressed or discussed with the EPA TOPO prior to the contractor furnishing draft deliverables.

EPA anticipates that the contractor's work will be judged "satisfactory" according to the QASP if the TOPO's edits to deliverables are no more than ten percent (10%) of the content of any draft deliverable, or less than two percent (2%) of any final deliverable. In addition, EPA anticipates that the Contractor's work will be judged "satisfactory" according to the QASP if less than ten percent (10%) of the pages of written final deliverables contain the TOPO's edits for such things as grammar, punctuation and format. The EPA TOPO can upon request furnish a copy of the EPA correspondence manual for the contractor's use.

All deliverables (draft and final) to EPA shall be furnished in an electronic format that EPA can support (see TSAWP Contract PWS Section 4.0 Deliverables). All final deliverables shall be prepared according to EPA publication guidelines and shall be compliant with Section 508 of the Americans with Disabilities Act.

All draft and final deliverables from the contractor under this PWS are potentially subject to Freedom of Information Act requests.

All submittals to EPA shall be formatted as described below:

- Any written reports, summaries or analysis documents shall be in electronic Microsoft Word®.
- Any and all spreadsheets, raw data, coding and modeling work (including all model runs with essential data to replicate model runs) shall be in electronic Microsoft Excel® or XML formats.

Appropriate electronic format that is supported by EPA and printing of all GIS data layers, maps, photos, bench sheets and other written material not easily printed or saved in the above formats will be discussed and a format agreed upon with the EPA TOPO prior to submittal by the contractor.

G. ANTICIPATED TRAVEL

All travel under this Task Order shall be in compliance with contract requirements and only according to specific written Technical Direction from the TOPO. (See contract clause H-17). The following travel is anticipated under the following Tasks:

Task 2 — Periodic travel to CBPO in Annapolis, Md., when in-person meetings are required. Anticipated three to four in-person meetings per year, the vast majority of the interactions being conducted through conference calls.

Based on the above information, in each base and option period the contractor shall expect one to two in-person meetings throughout the Bay watershed and three to four in-person meetings at CBPO in Annapolis, Md. The length of the meetings and amount of contractor personnel needed for each trip will be provided to the contractor through written technical direction from the TOPO.

H. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the EPA TOPO.

I. MEETING GUIDELINES AND LIMITATIONS:

Travel is not anticipated to be routine under this contract. EPA expects that the majority of the dollars to go toward the development of the technical documents. EPA projects that none of the individual meetings identified in these tasks will exceed a total cost of \$1,000 with total travel not to exceed \$5,000 in any performance period. The contractor shall immediately notify the EPA Contracting Officer, PO and TOPO of any anticipated individual event which meets the definition of a "conference," with total net expenditures anticipated to be greater than \$20,000.

A **"conference" or "conference-related activity"** is an internal or external meeting, retreat, seminar, symposium or event that involves expenses from the following categories: attendee travel paid for by the EPA; training activities; or EPA hosted or co-hosted, sponsored or co-sponsored events incurring speaker fees, food and refreshment expenses, non-federal facility expenses, audio visual expenses and/or contract related conference expenses. **"Conference expenses"** are all direct and indirect conference costs paid by the government, whether paid directly by agencies or reimbursed by agencies to travelers or others associated with the conference, but do not include funds paid under federal grants to grantees. Conference expenses include any associated authorized travel and per diem expenses, hire of rooms for official business, audiovisual use, light refreshments, registration fees, ground transportation, and other expenses as defined by the Federal Travel Regulation. All outlays for conference preparation and planning should be included. The FTR provides some examples of direct and indirect conference costs included within conference expenses. After notifying EPA of the potential to reach this threshold, the contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

J. QUALITY ASSURANCE SURVEILLANCE PLAN: Per contract requirements.

K. VALIDATION OF SECTION 508 COMPLIANCE OF TASK ORDER DELIVERABLES

The Contractor shall support the TOPO in conducting a "Final Deliverable Validation" to ensure compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to "electronic and information technology (EIT) deliverables". The Contractor shall furnish certification, in writing, to the TOPO that the Contractor has complied with EPAAR Clause 1552.211-79 "Compliance with EPA Policies for Information Resources Management", including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>.

L. REFERENCES

Links to background documents relevant to this Task Order:

December 2010 Chesapeake Bay TMDL:
<http://www.epa.gov/chesapeakebaytmdl>

Chesapeake Bay Program Partnership's Modeling Tools:
http://www.chesapeakebay.net/groups/group/modeling_team

Chesapeake Bay Program Partnership's ChesapeakeStat Website:
<http://stat.chesapeakebay.net/>

Chesapeake Bay Jurisdictions' Watershed Implementation Plans
<http://www.chesapeakebay.net/about/programs/watershed>

Chesapeake Bay Jurisdictions' Trading and Offset Information:
<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

M. GOVERNMENT FURNISHED INFORMATION/TOOLS

The following tools will be provided by the TOPO to the contractor within 15 days after the contract has been awarded:

- Chesapeake Bay Scenario Builder
- Chesapeake Assessment and Scenario Tool
- Phase 5.3.2 Chesapeake Bay Watershed Model
- Chesapeake Bay TMDL Tracking and Accounting System

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES

1

6

2. AMENDMENT/MODIFICATION NO.

002

3. EFFECTIVE DATE

See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

PR-CPOD-15-00181

5. PROJECT NO. (If applicable)

6. ISSUED BY

CODE

CPOD

7. ADMINISTERED BY (If other than Item 6)

CODE

CPOD

(FOR U.S. MAIL ONLY)

US Environmental Protection Agency

26 West Martin Luther King Drive

Mail Code: NWD

Cincinnati OH 45268

CPOD

US Environmental Protection Agency

26 West Martin Luther King Drive

Mail Code: NWD

Cincinnati OH 45268

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

TETRA TECH, INC.

10306 EATON PLACE STE 340

FAIRFAX VA 220302201

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.

EP-C-12-055

0017

10B. DATED (SEE ITEM 13)

04/11/2014

CODE (b)(4)

FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

- ☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.
- Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

X

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

EPAAR 1552.211-73, EPAAR 1552.217-71, FAR 52.232-20, & FAR 52.232-22

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

The purpose of this modification is to:

- Exercise Option Period II
- Descope Option Period I in the amount of \$77,511 (\$ (b)(4) Estimated Cost, \$ (b)(4) Fixed Fee)

- Shift \$10,460.91 from the Base Period to incrementally fund Option Period II
- Shift \$16,805.00 from Option Period I to incrementally fund Option Period II
- Replace the PWS in its entirety with the attached PWS reflecting the Option Period I changes

See revised Task Order clauses for details of the changes.

TOCOR: Jennifer Sincock Max Expire Date: 03/27/2018

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Noelle Mills

15B. CONTRACTOR/OFFEROR

15C. DATE SIGNED

16B. UNITED STATES OF AMERICA

16C. DATE SIGNED

(Signature of person authorized to sign)

(Signature of Contracting Officer)

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-C-12-055/0017/002PAGE OF
2 6NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>LIST OF CHANGES:</p> <p>CHANGES FOR LINE ITEM NUMBER: 1 (Base Period) Obligated Amount for this modification: -\$10,460.91 Incremental Funded Amount changed from \$44,193.00 to \$33,732.09</p> <p>CHANGES FOR ACCOUNTING CODE: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 Amount changed from \$44,193.00 to \$33,732.09</p> <p>CHANGES FOR LINE ITEM NUMBER: 2 (Option Period I) Total Amount changed from \$130,194.00 to \$52,683.00 Obligated Amount for this modification: -\$16,805.00 Incremental Funded Amount changed from \$69,488.00 to \$52,683.00</p> <p>CHANGES FOR ACCOUNTING CODE: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 Amount changed from \$69,488.00 to \$52,683.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 3 (Option Period II) Obligated Amount for this modification: \$27,265.91 Incremental Funded Amount changed from \$0.00 to \$27,265.91 Exercised option</p> <p>NEW ACCOUNTING CODE ADDED: Account code: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 Beginning Fiscal Year 14 Ending Fiscal Year 15 Fund (Appropriation) B Budget Organization 03LP0CB Program (PRC) 202B63 Budget (BOC) 2505 Job # (Site/Project) Cost Organization DCN-LineID 1403LL1014-001 Amount: \$27,265.91</p> <p>Payment Address: RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED

EP-C-12-055/0017/002

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6

NAME OF OFFEROR OR CONTRACTOR

TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>www2.epa.gov/financial/contracts Durham NC 27711 FOB: Destination Period of Performance: 04/11/2014 to 09/27/2016 In consideration of the modification agreed to herein as complete equitable adjustments for the Contractor's proposal dated September 2, 2015, the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the proposal.</p>				

**PERFORMANCE WORK STATEMENT
TSAWP CONTRACT
EP-C-12-055 TASK ORDER 17**

A. TITLE: Chesapeake Bay TMDL Midpoint Assessment and Watershed Implementation Plan Support – Support of EPA’s Review of Chesapeake Bay Jurisdictions’ Offset and Trading Programs

B. BACKGROUND & OBJECTIVES

Background

On December 29, 2010, the U.S. Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL). A TMDL calculates the maximum amount of a pollutant that a waterbody can receive while still meeting water quality standards. The Chesapeake Bay TMDL is the largest, most complex TMDL in the country, covering a 64,000-square-mile area across seven jurisdictions for the tidal segments and tributaries of the Chesapeake Bay that are impaired due to excessive loads of nitrogen, phosphorus and sediment. The Chesapeake Bay TMDL allocates loading caps to sources contributing those pollutants in seven jurisdictions of the Bay watershed—Delaware, the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia. Leading up to 2017, the Chesapeake Bay TMDL calls for a midpoint assessment to review progress toward meeting the nutrient and sediment pollutant load reductions identified in the 2010 Chesapeake Bay TMDL and the Bay jurisdictions’ Phase I and Phase II Watershed Implementation Plans (WIPs). This was designed as a mid-course check on progress to allow necessary adjustments in strategies to ensure that the Chesapeake Bay Program Partnership (Partnership) could achieve its 2025 goals for putting the necessary practices in place to restore Chesapeake Bay water quality to levels achieving water quality standards. A Phase III Watershed Implementation Plan is expected to be prepared by each jurisdiction which will address any needed adjustments.

The Bay jurisdictions bear the responsibility for implementing the Bay TMDL as outlined in their Phase I and II WIPs. Offset and trading programs are possible tools the jurisdictions may utilize to implement the Bay TMDL. EPA expects that new or increased loadings of nitrogen, phosphorous and sediments in the Chesapeake Bay watershed will be offset by loading reductions and credits generated by other sources. Beyond permitting and nonpoint source controls, water quality trading is one approach that Bay jurisdictions may use to achieve the load reduction requirements established under the Bay TMDL.

Water quality trading is a market-based approach, providing an economic incentive for voluntary pollutant reductions from point and nonpoint sources of pollution, to improve and preserve water quality. Trading can provide greater efficiency in achieving water quality goals in watersheds by allowing one source to meet its regulatory obligations by using pollutant reductions created by another source with lower pollution control costs.

EPA recognizes that a number of Chesapeake Bay jurisdictions are already implementing water quality trading programs. EPA supports implementation of the Bay TMDL through

water quality trading programs, as long as they are established and implemented in a manner consistent with the Clean Water Act (CWA), its implementing regulations, EPA's 2003 Water Quality Trading Policy and the 2007 Water Quality Trading Toolkit for NPDES Permit Writers. EPA does not support any trading activity that would delay or weaken implementation of the Bay TMDL, that is inconsistent with the assumptions and requirements of the TMDL, or that would cause the combined point source and nonpoint source loadings covered by a trade to exceed the applicable loading cap established by the TMDL.

To promote the success of trading and offset programs in the jurisdictions, EPA intends to maintain regular oversight of jurisdictions' programs through periodic programmatic reviews and evaluations beginning with EPA's initial assessment of the jurisdictions trading and offset programs during 2011-2012. EPA's findings informed the offset and trading provisions that jurisdictions included in their Phase II WIPs. To further support the jurisdictions as they continue to develop and modify their offset and trading programs, EPA had committed to develop a series of technical memorandums (TMs), consistent with the Bay TMDL's Appendix S, for several offset and trading related topics. Several of these TMs have been drafted and are in various stages of completion. Additional information can be found at EPA's Bay TMDL website:

<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

The U.S. Environmental Protection Agency (EPA) is seeking contractor assistance with the tasks described below to support trading and offset work and activities on the midpoint assessment and also support local partners in deciding how to cost-effectively implement the pollutant load reductions and manage load growth called for in their jurisdiction's WIPs. The Jurisdictions', at some point in the future, may have trading and offset programs that apply outside the Chesapeake Bay Watershed. It is the intent of this performance work statement to apply to those programs also.

Objectives

Included among the Bay TMDL 2017 midpoint assessment priorities, EPA will continue its oversight role on the implementation of the Bay TMDL where trading and offset programs are utilized to meet the 2017 interim goal of the Bay TMDL. EPA will also assist in determining what changes should be considered to existing jurisdictions' trading and offset programs as the Partnership moves from the 2017 midpoint and focuses on implementation of the jurisdictions' Phase III WIPs to meet the 2025 TMDL goal.

EPA, the seven watershed jurisdictions, along with their federal agency partners, will also continue to monitor progress towards meeting the TMDL load reductions and load growth utilizing the existing accountability framework. This accountability framework, described within the Chesapeake Bay TMDL (see Section L, "References") includes the jurisdictions' WIPs, two-year milestones by jurisdictions and federal agencies, annual progress reporting and tracking, and federal actions, if needed. As part of this effort, the Partnership will need to continue to simulate jurisdictions' baseline and credit calculations, among other programmatic applications, and evaluate the nutrient and sediment controls associated with various best management practices (BMPs) using the Chesapeake Bay Program modeling tools.

C. TASKS

The contractor shall provide support for the below tasks in the Base Period and in each Option Period. Written technical direction will be utilized to provide further detail on specific work included in the Performance Work Statement (PWS), provide guidance, or approve or comment on deliverables. The Task Order Project Officer (TOPO), the Alternate TOPO (if the TOPO is on leave or travel), and the Contracting Officer are the only individuals authorized to issue technical direction. The contractor shall anticipate working with the TOPO, staff leads from EPA Water Protection Division (WPD), Chesapeake Bay Program Office (CBPO) and jurisdictions to furnish the requested technical assistance. **However only the TOPO may issue written technical direction, which will be the sole basis for the contractor to incur billable costs.**

The individual(s) working on this activity need to have the skills and experience of a Chesapeake Bay watershed modeler, with a working understanding of the Trading and Offset Technical Memoranda being developed by EPA Region 3 (see Section L, "References").

Task 1: Kickoff Meeting, Reporting, and Communication

The contractor shall participate in a Kickoff Meeting with the TOPO either in person or via conference call to discuss the following: points of contact, roles and responsibilities, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls, monthly technical progress reports, and general Task Order administrative information. The technical progress reports shall include status updates of all of the tasks of this PWS.

The TOPO will coordinate and set-up monthly working calls between EPA staff and the contractor's technical lead to discuss the status and progress of the work under this Task Order. The contractor shall participate in these monthly calls. The frequency of the monthly conference calls may be modified based on project status at the request of the contractor and only as approved by EPA.

The contractor shall notify the TOPO of any problems, delays or questions as soon as they arise, including immediate written notification of any Task Order delays. The contractor shall provide a written monthly status report in accordance with contract requirements which will be used for invoice review purposes. All reporting shall be provided in accordance with the PWS Sections E and F.

In general, written materials including meeting summaries shall be furnished by the contractor within five business days after request in draft form for the TOPO to review; then a final written deliverable would be expected within five business days after receipt of written technical direction from the TOPO, including the TOPO's comments and edits to the draft deliverable.

Task 2: Support for Developing Technical Memoranda to Assist Jurisdictions' Development of Offset and Trading Programs.

EPA needs assistance with researching, writing and completing the following Technical Memoranda (a – l) below that will provide the jurisdictions further guidelines as to EPA's expectations for responding to the findings referred to in the Background section of this document. These Technical Memoranda are not official agency guidance and are only applicable in the Chesapeake Bay watershed. It is also limited to the monitoring and estimation of annual loads. It is important that annual load monitoring and load calculations be accurate to insure that existing loads comply with the Waste Load Allocations (WLAs) and that new loads are offset completely. The 2010 Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorous and Sediment¹ (Bay TMDL) expects the Bay jurisdictions to offset all new or increased loads and identifies trading as a tool that can be used to implement the Bay TMDL. The programs are expected to be consistent with the Bay TMDL, including its allocations and assumptions and the common elements of Appendix S. Jurisdictions' offset and trading programs also should be consistent with the Clean Water Act², its implementing regulations, EPA's 2003 Water Quality Trading Policy,³ and EPA's 2007 Water Quality Trading Toolkit for NPDES Permit Writers.⁴ These Technical Memoranda include but are not limited to:

a) Technical Memorandum on Representative Sampling

The contractor shall support EPA in developing a Technical Memorandum on representative sampling. This Technical Memorandum addresses the load calculation methodology and sampling frequency of Chesapeake Bay watershed wastewater treatment plants and identifies an approach that should result in data sufficient to support Chesapeake Bay jurisdictions' trading and offset programs. (Additional technical memorandums have been or shall be developed that address specific aspects of the jurisdictions' offset and trading programs).

Data collected by EPA from one Waste Water treatment Plant (WWTP) in PA and one in VA is sufficient to estimate the potential error introduced into Total Nitrogen (TN) and Total Phosphorous (TP) total load calculations from using only one or two samples of plant discharge per week that are subsequently aggregated to monthly estimates. The data from the two facilities also allow for a quantitative assessment of the cost effectiveness of increasing the number of samples per week in terms of improvement in the total TN and TP load calculations. Finally, the data from the VA and PA WWTPs enable a comparison of two alternative methods for calculating total loads.

This technical memorandum assesses the post-treatment loads from two WWTPs. This technical memorandum and its associated analysis are based upon the assumption that sampling is random and that there is no bias created by drawing samples at non-

¹ Full text of the Bay TMDL may be found at:
<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>

² Clean Water Act, 33 U.S.C. §§ 1251 et seq.

³ <http://www.epa.gov/owow/watershed/trading/finalpolicy2003.pdf>

⁴ United States Environmental Protection Agency, "Water Quality Trading Toolkit for Permit Writers," Updated June 2009. Available online at <http://water.epa.gov/type/watersheds/trading/WQTToolkit.cfm>

⁵ The Chesapeake Bay jurisdictions are: Delaware, Maryland, Pennsylvania, New York, Virginia, West Virginia, and the District of Columbia

representative modes of operation. The conclusions and recommendations to be drawn should be able to account for the fact that samples can be taken at non-representative points of time. The objectives of this technical memorandum are to:

- Determine if there are weekly, monthly or seasonal influences on the load calculations,
- Assess how changes in sampling frequency change the accuracy of the results,
- Assess the relationship among sampling frequency, accuracy of load estimates, and sampling cost, and
- Assess bias in average monthly loads using two different calculation methods.

b) Technical Memorandum on Baseline Demonstration for Jurisdictions

The contractor shall support EPA in the evaluation and development of baseline demonstrations for the Chesapeake Bay jurisdictions' to support their offset/trading programs. The purpose of this evaluation is to determine if the agricultural and stormwater trading and offset baseline and credits generated for trading and offsets meet the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL) for nitrogen, phosphorus, and sediment. This evaluation is solely for the purpose of determining if the jurisdictions' trading and offset baselines are acceptable in the context of the Bay TMDL as defined in Section 10 and Appendix S⁶. The conclusions from this evaluation are not intended to be used for any other purpose than establishing the baseline and the credits generated for a trade and/or offset as comparable to the TMDL allocation and load reductions calculated by the Chesapeake Bay Program Watershed Model-Hydrological Simulation Program-Fortran. Model comparison is neither evaluated for nor intended to be used for Watershed Implementation Plans (WIPs), Annual Progress Review, Milestones or any other EPA or Chesapeake Bay Program use of the Watershed Model. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, and the Bay TMDL.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from the Chesapeake Assessment and Scenerio Tool (CAST), the Maryland Assessment and Scenerio Tool (MAST), the Virginia Assessment Scenerio Tool (VAST), Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions. EPA will provide these scenarios to the contractor.

c) Technical Memorandum on Credit Calculation Methodology

⁶ Full text of the 2010 TMDL is available at <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>. Last accessed 11/30/2012.

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Calculation Methodology using the tools Nutrient Tracking Tool. These models and calculation tools will be provided by EPA and USDA

d) Technical Memorandum on Interstate Trading

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Interstate Trading. Some Chesapeake Bay Watershed jurisdictions have proposed the buying and selling credits across jurisdiction boundaries. Anticipate the memorandum being up to ten (10) pages. Further information will be provided by the Task order Contracting Officer Representative through Technical Direction.

e) Technical Memorandum on MS4 and Construction permits Trading and TMDL

The contractor shall support EPA in the evaluation and development of a Technical Memorandum on MS4 and Construction permits to support stormwater trading and offset programs for Chesapeake Bay jurisdictions. This TM shall address credit purchases and sale by NPDES-permitted MS4s, NPDES-permitted construction, and NPDES-permitted industrial stormwater facilities. This TM will not be addressing off-site reductions on property owned by the same owner or fee-in-lieu programs for meeting load requirements. The contractor shall:

- Assist EPA with the design and evaluation of Watershed Model scenarios to assess the offset/trading programs.
- Suggest improvements to the offset/trading programs to bring them in line with EPA regulations, guidance, the Bay TMDL, and other expectations.
- Assist EPA and CBP in responding to jurisdictional modifications of their offset/trading programs.
- Analyze model scenarios from CAST/MAST/VAST, Scenario Builder, and the Watershed Model to answer questions and address concerns by jurisdictions.

f) Technical Memorandum on Net Improvement Offset

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Net Improvement Offsets. Net Improvement Offsets, for purposes of the Bay TMDL, this means an offset at a ratio greater than merely accounting for the entire new or increased load. The jurisdiction's offset program would need to provide the authority and procedures for invoking such a provision. This tool might be considered as a means to accelerate load reductions where a jurisdiction is not on a schedule to ensure that nitrogen, phosphorus, and sediment controls are in place by 2017 and 2025 to meet interim and final target loads, respectively. This may be determined based on an EPA evaluation of a jurisdiction's progress on its WIP and 2-year milestones, as discussed in EPA's December 29, 2009 letter (USEPA 2009d). Net improvement offsets also might be considered, in the case of permitted point sources, to offset new or increased loads from nonpoint sources or from point sources not expected to be permitted.

g) Technical Memorandum on Sector Growth Demonstration

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Sector Load Growth Demonstration. This technical memorandum is intended to assist the Bay jurisdictions with their determination of whether the loads of nitrogen, phosphorus, and/or sediment are projected to increase for any particular sector and, therefore, whether the jurisdiction will need an offset program to accommodate handling those projected offsets should they occur, as opposed to handling such offsets on a case-by-case basis. This increase in the load(s) of nitrogen, phosphorus, and/or sediment is referred to as "growth".

h) Technical Memorandum on Trading Ratio based upon Uncertainty

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Trading Ratio based upon Uncertainty. This Technical Memorandum identifies EPA's expectations for how the Chesapeake Bay jurisdictions should address the issue of uncertainty in their respective offset and/or trading programs. This Technical Memorandum will address methods to reduce uncertainty in the calculation of credits used for offsets or trading in the Chesapeake Bay watershed. Uncertainty in trading or offsets has multiple sources, including variability in best management practice (BMP) effectiveness, weather, soils, and BMP maintenance and success.

BMP effectiveness values were developed by subject area experts working with the Chesapeake Bay Program. When each effectiveness value was developed, the effectiveness value was discounted for certain types of uncertainty that include: operational conditions, implementation date and time to maturity, and variation in natural conditions. The effectiveness values implicitly address those sources of uncertainty.

Other sources of uncertainty exist that are not implicitly addressed in credit generation and calculation. Such sources of uncertainty include, but are not limited to, lag times, land use changes, soils, and failed credit generation. Given that uncertainty is unavoidable, EPA expects the Bay jurisdictions to incorporate an uncertainty ratio(s) that are to be developed in this Technical Memorandum in their offset and/or trading programs.

i) Technical Memorandum on Verification Measures relating to nutrient credit trading and offsets

The contractor shall support EPA in evaluation and development of a Technical Memorandum on verification measures relating to nutrient credit trading and offsets. Verification of the credit generating activity is performed to ensure that the best management practice (BMP) was installed and maintained properly to meet appropriate criteria. EPA has the following expectations for verification:

- Verification should be conducted after the practice is implemented and before the seller and buyer enter into a contractual agreement and on an annual basis thereafter.
- Verification should be conducted by trained and independent verifiers.
- Verifiers should consider factors related to the BMP installation, effectiveness, and duration.
- Verification should be performed on a representative sample of credit generating practices.

- Verification results should be made publically available.

j) Technical Memorandum on Credit Permanence

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Credit Permanence. This technical memorandum addresses credit permanence when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL). Credit permanence in the context of the Bay TMDL and NPDES permits is defined as the period of time that a credit purchaser should purchase credits to meet the obligations of its NPDES permit. This technical memorandum will provide examples of situations that illustrate appropriate periods of time.

k) Technical Memorandum on Additionality

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Additionality.

This Technical Memorandum will address how to determine if credits generated are additional to load reductions that would have occurred without a trading or offset program. The 2010 Chesapeake Bay TMDL specifies, and this technical memorandum reiterates, that credit generation may occur only after baseline has been met. Baseline is equivalent to the state sector allocations under the TMDL. For permitted facilities, the WLA is the baseline and the WLA requirements for the permitted facility that wants to enter into trading must be met prior to credit generation. Where permit conditions are not quantifiable, then credits may be neither generated nor purchased to meet the permit.

Credits used to offset loads should be additional to what is already planned and in existence, and may not be a component of a jurisdiction's approved plan for meeting the sector allocations under regulations in existence before 2010. Credits generated must be for practices implemented after the issuance of the TMDL in 2010. Credits generated by permitted facilities should be additional to what is in permits that were written prior to the issuance of the 2010 TMDL.

l) Technical Memorandum on Local Water Quality Protection

The contractor shall support EPA in evaluation and development of a Technical Memorandum on Local Water Quality Protection. This technical memorandum addresses protection of local water quality when using credits for compliance with NPDES permit requirements in trading programs and for offsetting of new or increased loads as described in the 2010 Chesapeake Bay Total Maximum Daily Load (Bay TMDL).

For the purposes of this technical memorandum, "local waters" means the receiving waters adjacent to where the credit is being generated as well as the receiving waters adjacent to where the credit is being used, namely, at the point of discharge.

Task 2 Deliverables:

All written documentation and files produced by the contractor and provided to the TOPO shall be in an electronic format that EPA can support. The contractor shall:

1. Furnish written monthly progress updates of each activity under this task requested by the TOPO through technical direction in their quarterly technical progress reports described under Task 1.
2. Provide immediate written notification to the TOPO of any delays in completing any activities under this task.
3. Prepare and provide EPA with preparation first draft Technical Memorandums for the above listed topics based on discussions with individual EPA Technical Memorandum leads identified in EPA Region 3 work plan. EPA will provide these drafts to the Chesapeake Bay jurisdictions for review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
4. Compile into a summary report comments provided by individual jurisdictions and stakeholders which were provided to EPA through emails, telephone calls with, and written replies from jurisdictions and stakeholders regarding each Technical Memorandum. Each draft is due within 15 days of discussion with EPA Technical Memorandum lead.
5. Prepare and possibly give presentations internally and externally to EPA, jurisdictions and stakeholders as requested by individual EPA Technical Memorandum lead Assist during EPA internal and external meetings and telephone conference calls with note taking.
6. Attend meetings with EPA regarding the scoping and clarification of issues raised regarding these technical memorandums.
7. Prepare a final draft of each Technical Memorandum for each topic according to the schedule in EPA Region 3's work plan for EPA's review. Each draft is due within 15 days of discussion with individual EPA Technical Memorandum lead.
8. Finalize all Technical Memorandums within 15 days of discussion with individual EPA Technical Memorandum lead. These final technical memoranda may be revised periodically.

D. SCHEDULE OF BENCHMARKS & DELIVERABLES

All deliverables developed under this Task Order must be provided to the TOPO in an electronic format supported by EPA. Reports must be of high quality. Work must reflect a high level of technical proficiency and be clearly explained and documented.

Base Period (Task order award - September 27, 2014)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Task 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of task order award.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2014.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period I (September 28, 2014–September 27, 2015)

Task No.	Deliverable	Schedule
1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of the start of Option Period I.</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum under Sub-tasks 2 a), b), c), e), g), and i). No technical memorandum will be provided under Sub-tasks 2 d), f), h), j), k), and l) during Option Period I.</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2015.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period II (September 28, 2015–September 27, 2016)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period II.</p> <p>Monthly</p> <p>On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly</p> <p>On the last business day of each month.</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2016.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period III (September 28, 2016–September 27, 2017)

1	<p>1.1 Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period III.</p> <p>Monthly</p> <p>On the last business day of each month.</p> <p>Ongoing</p> <p>Monthly</p> <p>On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through September 27, 2017.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

Option Period IV (September 28, 2017–March 27, 2018)

1	<p>1.1 Participate Kickoff meeting.</p> <p>1.2 Monthly conference calls with the TOPO.</p> <p>1.3 Immediate written notification to the TOPO of any delays in completing any activities under this task.</p> <p>1.4 Monthly written technical progress reports to TOPO. These reports shall include updates on all applicable activities under Tasks 2 through 7.</p> <p>1.5 Timely communication with TOPO.</p>	<p>Within 10 business days of start of Option Period IV.</p> <p>Monthly</p> <p>On the last business day of each month</p> <p>Ongoing</p> <p>Monthly</p> <p>On the last business day of each month</p> <p>Ongoing</p>
2	<p>2.1 Identification of analytical methods to perform this analysis submitted by contractor.</p> <p>2.2 Written monthly progress updates to EPA that summarizes progress to date and sets priorities for the coming month.</p> <p>2.3 Written notification to EPA of any delays in completing activities.</p> <p>2.4 Written description of modeling results and presentations to states.</p> <p>2.5 Draft technical memorandum</p>	<p>2.1 Written description of analytical methods to perform this analysis submitted within 15 days of development.</p> <p>2.2 Progress reports – monthly through March 27, 2018.</p> <p>2.3 Notification of delays to EPA within 5 days of delay discovery</p> <p>2.4 Written description of modeling results, statistical analysis, and presentations to states within 15 days of development</p> <p>2.5 Draft technical memorandum within 15 days of EPA's receipt and acceptance of written description of modeling results.</p>

When the Task Order reaches 30 calendar days prior to the end of the Period of Performance in a given period, the contractor shall make a determination that the deliverables, milestones, benchmarks, and any outstanding technical direction from the TOPO, shall be satisfactorily completed in the form requested in the PWS by the end of the Period of Performance and for the remaining funding that is available.

If the contractor determines one or more of the above-referenced items will not be able to be completed in the requested form within the period of performance and with the available

funding, the contractor shall notify the TOPO and the CO immediately. Within five business days of said notification, the TOPO in coordination with the CO will provide technical direction concerning use of the remaining funding to prepare and furnish to the TOPO all interim draft deliverables, interim work products, and any working files in an electronic format which is supported by EPA, for eventual continuation of the project after the end date of the Task Order.

E. REPORTING

All documentation and reporting under this Task Order shall be in compliance with contract requirements.

F. DELIVERABLES AND GENERAL PERFORMANCE

The contractor shall participate in meetings and conference calls arranged by the EPA TOPO. The contractor shall when requested by the TOPO provide supporting documentation when EPA is reviewing draft deliverables to facilitate EPA review and approval of the contractor's work. Documentation will include the electronic files and detailed, written explanation of all steps and decisions. The contractor is expected to comply with this request when it is received from the TOPO regardless of whether such a request is described in the individual tasks of this PWS. The contractor is expected to furnish this information in such manner that no proprietary software will be needed for EPA to read, interpret, replicate or model any work product of this agreement, unless otherwise noted in this PWS or by written permission of the EPA TOPO. The objective is that anyone with the appropriate skill level can use the information produced under this Task Order to check or duplicate the contractor's work for replication and/or verification. With this understanding of how this Task Order's data will be used, any elements essential to successfully replicating analysis shall be provided to EPA in a commonly-used format.

The contractor shall provide to the TOPO written evidence of the contractor's scientific/technical and editorial review as defined in Section 2.6 of the Prime Contract Performance Work Statement on any Task Order **draft** product before submission to the EPATOPO for review. This process does not need to be performed by an independent peer reviewer. It is expected that all editorial review comments will be addressed before deliverables are furnished to the EPA TOPO for review (in the case of draft deliverables) or acceptance (in the case of final deliverables); and that questions raised by scientific/technical review will be either addressed or discussed with the EPA TOPO prior to the contractor furnishing draft deliverables.

EPA anticipates that the contractor's work will be judged "satisfactory" according to the QASP if the TOPO's edits to deliverables are no more than ten percent (10%) of the content of any draft deliverable, or less than two percent (2%) of any final deliverable. In addition, EPA anticipates that the Contractor's work will be judged "satisfactory" according to the QASP if less than ten percent (10%) of the pages of written final deliverables contain the TOPO's edits for such things as grammar, punctuation and format. The EPA TOPO can upon request furnish a copy of the EPA correspondence manual for the contractor's use.

All deliverables (draft and final) to EPA shall be furnished in an electronic format that EPA can support (see TSAWP Contract PWS Section 4.0 Deliverables). All final deliverables shall be prepared according to EPA publication guidelines and shall be compliant with Section 508 of the Americans with Disabilities Act.

All draft and final deliverables from the contractor under this PWS are potentially subject to Freedom of Information Act requests.

All submittals to EPA shall be formatted as described below:

- Any written reports, summaries or analysis documents shall be in electronic Microsoft Word®.
- Any and all spreadsheets, raw data, coding and modeling work (including all model runs with essential data to replicate model runs) shall be in electronic Microsoft Excel® or XML formats.

Appropriate electronic format that is supported by EPA and printing of all GIS data layers, maps, photos, bench sheets and other written material not easily printed or saved in the above formats will be discussed and a format agreed upon with the EPA TOPO prior to submittal by the contractor.

G. ANTICIPATED TRAVEL

All travel under this Task Order shall be in compliance with contract requirements and only according to specific written Technical Direction from the TOPO. (See contract clause H-17). The following travel is anticipated under the following Tasks:

Task 2 — Periodic travel to CBPO in Annapolis, Md., when in-person meetings are required. Anticipated three to four in-person meetings per year, the vast majority of the interactions being conducted through conference calls.

Based on the above information, in each base and option period the contractor shall expect one to two in-person meetings throughout the Bay watershed and three to four in-person meetings at CBPO in Annapolis, Md. The length of the meetings and amount of contractor personnel needed for each trip will be provided to the contractor through written technical direction from the TOPO.

H. CONTRACTOR IDENTIFICATION

Contractor personnel shall always identify themselves as Contractor employees by name and organization and physically display that information through an identification badge. Contractor personnel are prohibited from acting as the Agency's official representative.

The Contractor shall refer any questions relating to the interpretation of EPA policy, guidance, or regulation to the EPA TOPO.

I. MEETING GUIDELINES AND LIMITATIONS:

Travel is not anticipated to be routine under this contract. EPA expects that the majority of the dollars to go toward the development of the technical documents. EPA projects that none of the individual meetings identified in these tasks will exceed a total cost of \$1,000 with total travel not to exceed \$5,000 in any performance period. The contractor shall immediately notify the EPA Contracting Officer, PO and TOPO of any anticipated individual event which meets the definition of a "conference," with total net expenditures anticipated to be greater than \$20,000.

A **"conference" or "conference-related activity"** is an internal or external meeting, retreat, seminar, symposium or event that involves expenses from the following categories: attendee travel paid for by the EPA; training activities; or EPA hosted or co-hosted, sponsored or co-sponsored events incurring speaker fees, food and refreshment expenses, non-federal facility expenses, audio visual expenses and/or contract related conference expenses. **"Conference expenses"** are all direct and indirect conference costs paid by the government, whether paid directly by agencies or reimbursed by agencies to travelers or others associated with the conference, but do not include funds paid under federal grants to grantees. Conference expenses include any associated authorized travel and per diem expenses, hire of rooms for official business, audiovisual use, light refreshments, registration fees, ground transportation, and other expenses as defined by the Federal Travel Regulation. All outlays for conference preparation and planning should be included. The FTR provides some examples of direct and indirect conference costs included within conference expenses. After notifying EPA of the potential to reach this threshold, the contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

J. QUALITY ASSURANCE SURVEILLANCE PLAN: Per contract requirements.

K. VALIDATION OF SECTION 508 COMPLIANCE OF TASK ORDER DELIVERABLES

The Contractor shall support the TOPO in conducting a "Final Deliverable Validation" to ensure compliance with Section 508 and the Federal Acquisition Regulations (FAR) related to "electronic and information technology (EIT) deliverables". The Contractor shall furnish certification, in writing, to the TOPO that the Contractor has complied with EPAAR Clause 1552.211-79 "Compliance with EPA Policies for Information Resources Management", including the requirement that all electronic and information technology (EIT) deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>.

L. REFERENCES

Links to background documents relevant to this Task Order:

December 2010 Chesapeake Bay TMDL:
<http://www.epa.gov/chesapeakebaytmdl>

Chesapeake Bay Program Partnership's Modeling Tools:
http://www.chesapeakebay.net/groups/group/modeling_team

Chesapeake Bay Program Partnership's ChesapeakeStat Website:
<http://stat.chesapeakebay.net/>

Chesapeake Bay Jurisdictions' Watershed Implementation Plans
<http://www.chesapeakebay.net/about/programs/watershed>

Chesapeake Bay Jurisdictions' Trading and Offset Information:
<http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/EnsuringResults.html?tab2=7>

M. GOVERNMENT FURNISHED INFORMATION/TOOLS

The following tools will be provided by the TOPO to the contractor within 15 days after the contract has been awarded:

- Chesapeake Bay Scenario Builder
- Chesapeake Assessment and Scenario Tool
- Phase 5.3.2 Chesapeake Bay Watershed Model
- Chesapeake Bay TMDL Tracking and Accounting System

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES	
						1 3	
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
003		See Block 16C		PR-CPOD-15-00182			
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
		CPOD				CPOD	
(FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268				CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268			
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(x) 9A. AMENDMENT OF SOLICITATION NO.			
TETRA TECH, INC. 10306 EATON PLACE STE 340 FAIRFAX VA 220302201							
				9B. DATED (SEE ITEM 11)			
				x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-12-055 0017			
				10B. DATED (SEE ITEM 13) 04/11/2014			
CODE (b)(4)		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required) See Schedule							
13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
CHECK ONE							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority) X FAR 52.232-22 Limitation of Funds							
E. IMPORTANT: Contractor <input checked="" type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)							
DUNS Number: (b)(4)							
The purpose of this modification is to shift funding in the amount of \$2,612.80 from Option Period II to the Base Period to pay two invoices which were incorrectly posted to Option Period I (Reference 50879809 & 50887354). The contractor has agreed to the processing of this modification unilaterally via email dated 9/14/2015, herein incorporated by reference. TOCOR: Jennifer Sincock Max Expire Date: 03/27/2018 LIST OF CHANGES: Reason for Modification: Funding Only Action CHANGES FOR LINE ITEM NUMBER: 1 (Base Period) Obligated Amount for this modification: \$2,612.80 Continued ...							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				Noelle Mills			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
(Signature of person authorized to sign)				(Signature of Contracting Officer)			

CONTINUATION SHEET	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	EP-C-12-055/0017/003	2	3

NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Incremental Funded Amount changed from \$33,732.09 to \$36,344.89</p> <p>CHANGES FOR ACCOUNTING CODE: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 Amount changed from \$33,732.09 to \$36,344.89</p> <p>CHANGES FOR LINE ITEM NUMBER: 3 (Option Period II) Obligated Amount for this modification: -\$2,612.80 Incremental Funded Amount changed from \$27,265.91 to \$24,653.11</p> <p>CHANGES FOR ACCOUNTING CODE: 14-15-B-03LP0CB-202B63-2505-1403LL1014-001 Amount changed from \$27,265.91 to \$24,653.11 FOB: Destination Period of Performance: 04/11/2014 to 09/27/2016</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES 1 18	
2. AMENDMENT/MODIFICATION NO. 004		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. See Schedule	
5. PROJECT NO. (If applicable)		7. ADMINISTERED BY (If other than Item 6) CPOD US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268		CODE CPOD	
6. ISSUED BY (FOR U.S. MAIL ONLY) US Environmental Protection Agency 26 West Martin Luther King Drive Mail Code: NWD Cincinnati OH 45268		8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) TETRA TECH, INC. 10306 EATON PLACE STE 340 FAIRFAX VA 220302201		(x) 9A. AMENDMENT OF SOLICITATION NO.	
CODE (b)(4)		FACILITY CODE		9B. DATED (SEE ITEM 11)	
				x 10A. MODIFICATION OF CONTRACT/ORDER NO. EP-C-12-055 0017	
				10B. DATED (SEE ITEM 13) 04/11/2014	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended. ☐ is not extended.
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
See Schedule Net Increase: \$60,706.00

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Unilateral: FAR 52.232-22 Limitation of Funds

E. IMPORTANT: Contractor ☒ is not ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DUNS Number: (b)(4)

The purpose of this modification is to add \$60,706, in incremental funding to Option Period II.

TOCOR: Jennifer Sincock Max Expire Date: 03/27/2018

LIST OF CHANGES:

Reason for Modification: Funding Only Action

CHANGES FOR LINE ITEM NUMBER: 3 (Option Period II)

Obligated Amount for this modification: \$60,706.00

Incremental Funded Amount changed from \$24,653.11 to \$85,359.11

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Noelle Mills	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
EP-C-12-055/0017/004PAGE
2OF
18NAME OF OFFEROR OR CONTRACTOR
TETRA TECH, INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 15-16-B-03LP0CB-202B63-2505 Beginning FiscalYear 15 Ending Fiscal Year 16 Fund (Appropriation) B Budget Organization 03LP0CB Program (PRC) 202B63 Budget (BOC) 2505 Job # (Site/Project) Cost Organization Amount: \$60,706.00 Delivery Location Code: R3 Region 3 US Environmental Protection Agency 1650 Arch Street Philadelphia PA 19103-2029 USA</p> <p>Payment:</p> <p>RTP Finance Center US Environmental Protection Agency RTP-Finance Center (AA216-01) 109 TW Alexander Drive www2.epa.gov/financial/contracts Durham NC 27711</p> <p>FOB: Destination Period of Performance: 04/11/2014 to 09/27/2016</p>				